BABURKIN, N.

Lifesaving equipment of fishing boats. Mor. flot 24 no.12:35-36 D '64. (MIRA 18:8)

1. Morskoy inspektor upravleniya "Murmansel'ga".

BABUROV, A., student; GLADKOVA, N., studentka; GUTNOV, A., student; ZVEZDIN, A., student; LEZHAVA, I., student; SADOVSKIY, S., student; SUKHANOVA, Ye., studentka; KHARITONOVA, Z., studentka

From the diploma project to the map of Siberia. Tekh.mol. 28 no.7:6-7 '60. (MIRA 13:8)

1. Moskovskiy arkhitekturnyy institut.
(Cities and towns--Planning)

BABUROV, I.

Trainee courses are a big and important work. Rech. transp. 19 no.10:57 O '60. (MIRA 13:11)

1. Starshiy inzhener otdela kadrov Severo-Zapadnogo rechnogo parokhodstva.
(Inland navigation--Study and teaching)

SUKAKSHIN, S.S.; GREBENYUK, A.A.; BABUROV, V.I.; POBEZHIMOV, N.F.; ROZHKOV, V.P.; KHRAMENKOV, V.G.

Development and introduction of the DKS-1-TPI double core drill. Razved. i okh. nedr 29 no.1:57-59 Ja '63. (MIRA 16:2)

1. Tomskiy politekhnicheskiy institut.
(Core drilling—Equipment and supplies)

GORBUNOV, V.F.; BABUROV, V.I.; OPARIN, Yu.A.; REDUTINSKIY, L.S.

Raising the efficiency of fettling operations. Lit. proizv. no.9: 13-15 S '64. (MIRA 18:10)

GORBUNOV, V.F., kand. tekhn. nauk; BABUROV, V.I.

Evaluating the vibration of chopping and riveting hammers.
Mashinostroitel' no.2:42-43 F '65. (MIRA 18:3)

GORBUNOV, V.G., kand. tekhn. nauk; [illegible], V.I., inzh.; [illegible], L.B., inzh.

Experimental testing of the effect of the elastic properties of the material being drilled on the internal processes and parameters of a manual pneumatic hammer. Izv. vys. ucheb. zav.; gor. zhur. 8 no.1:63-67 '65. (MIRA 18:3)

1. Tomskiy politekhnicheskiy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta.

L 24549-66

ACC NR: AP6006315 (N) SOURCE CODE: UR/0413/66/000/002/0034/0035

4/4
B

AUTHOR: Baburov, V. Ye.

ORG: none

TITLE: A device for the internal cooling of tubes. Class 18, No. 177916

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 34-35

TOPIC TAGS: cooling, internal flow, pipe, cryogenic device

ABSTRACT: This Author Certificate presents a device for the internal cooling of tubes. The device includes a circular nozzle which is located on the ring of the support (see Fig. 1). It provides uniform cooling of the inner surface of tubes

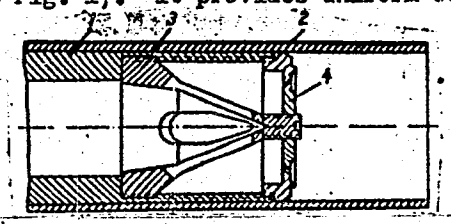

Fig. 1. 1 - support (spindle); 2 - flange; 3 - conical plug; 4 - moving disk.

Card 1/2

UDC: 621.784.8-462

L 24549-66
ACC NR: AP6006315

in the heat flow from rolling heating. This device has a flange and a conical plug with holes, both of which are held by the screw threads of the support (spindle). The plug carries a moving disk for regulating the slot of the nozzle. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 27Oct64

Card 2/2 MJS

SVETLICHNYY, V.I., red.; BABUROV, V.V., red.; DESYATKOV, G.V., red.; KRASIL'NIKOV, P.A., red.; KUDRYAVTSEV, A.O., red.; SVETLICHNYY, B.Ye., red.; SMIRNOV, N.S., red.; SHKVARIKOV, V.A., red.; PEVZNER, A.S., red.izd-va; GILENSON, P.G., tekhn.red.

[Regulations and norms for city planning and construction (SN 41-58)] Pravila i normy planirovki i zastroiki gorodov, SN 41-58. Izdanie ofitsial'noe. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 178 p. (MIRA 12:7)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

(City planning)

BABUROV, V.

Our new obligations. Avt. dor. 24 no. 1:1-3 Ja '61.
(MIRA 14:2)

1. Rukovoditel' brigady kommunisticheskogo truda DSR-1 Moskovskogo upravleniya stroitel'stva.
(Road construction)

VOSTRIKOVA, A.M.; SAKHAROVA, V.V.. Prinimali uchastiye: FISHKO, F.Ye.; YEFIMOVA, N.M.; BABURSKAYA, Z.T.; POZDNYAKOVA, K.I.; SHCHEGLOVA, K.D.; KUSTOVA, V.T.; POD"YACHIKH, P.G., red.; STRONGIN, V.L., red.; PYATAKOVA, N.D., tekhn.red.

[Public health in the U.S.S.R.; compendium of statistics] Zdravookhranenie v SSSR; statisticheskii sbornik. Moskva, Gosstatizdat TsSU SSSR, 1960. 271 p. (MIRA 13:8)

1. Russia (1923- U.S.S.R.) TSentral'noye statisticheskoye upravleniye.2. Otdel statistiki naseleniya i zdravookhraneniya TSentral'nogo statisticheskogo upravleniya SSSR (for all except Strongin, Pyatakova). 3. Chlen Kollegii TSentral'nogo statisticheskogo upravleniya SSSR (for Pod"yachikh).

(PUBLIC HEALTH--STATISTICS)

JABUKSKI, R.

Planning and statistics in regiments and battalions. p. 28. (VOJNI GLASNIK, Vol. 8, no. 6, June 1954, Beograd, Yugoslavia)

SO: Monthly list of East European Accessions, (EAL), LC, Vol. 4, no. 1 Jan. 1955, Uncl.

BABURSKI, R.

Combat firing by rifle units.

P. 18 (Vojni Glasnik. Vol. 10, no. 8, Aug. 1956. Beograd, Yugoslavia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

BABUS, M.

Directions on road construction. p. 306.
(REVISTA TRANSPORTURILOR. RUMANIA. Vol. 3, no. 8, Aug. 1956.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

L 31827-66 T JK

ACC NR: AP6021179 SOURCE CODE: RU/0026/65/016/005/0409/0413

AUTHOR: Diosi, P.; Nevinglovschi, Olimpia; Babusceac-Plavosin, Livia

21
B

ORG: none

TITLE: Comparative study concerning the cytopathic effect induced by cytomegalic and herpetic viruses on human embryo cell cultures

SOURCE: Studii si cercetari de inframicrobiologie, v. 16, no. 5, 1965, 409-413

TOPIC TAGS: virus, man, morphology, cytology, diagnostic medicine

ABSTRACT: The authors report that the morphologic chages caused by human cytomegalic virus and by herpetic viruses in human embryo cell cultures in liquid media show distinctive characteristics which permit differentiation of their cytopathic effect. The changes also permit an early tentative diagnosis. Orig. art. has: 4 figures and 1 table. [JPRS]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 018

Card 1/1 mc

UDC: 576.8.093.35:576.858.13

BABUSEK, F.; TICHY, V.

Humidity control in the insulation of transformer wirings. p. 530.
(Elektrotechnicky Obzor, Vol. 45, no. 10, October 1956. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions. (EEAL) LC. Vol. 6, No. 6, June 1957. Uncl.

Babus, M.

BABUS, M.

BABUS, M. Permanent control of quality of road work in the course of the technological process. p. 460.

Vol. 3, no. 12, Dec. 1956
REVISTA TRANSPORTURILOR.
TECHNOLOGY
RUMANIA

So: East European Accession, Vol. 6, No. 5, May 1957

"Dynamics of Development of Grain Microflora which have Hibernated in an Experimental Grain Field," Gig. i San., No. 5, 1949. Dept. Nutritive Hygiene, Nutrition Inst., Acad. Med. Sci. USSR, ~~-c1949-~~.

BABUSENKO, A.M.

Studying the serological properties of Proteus and its relation to the etiology of food toxinfections. Vop.pit. 14 no.6:26-29 N-D '55. (MLRA 9:1)

1. Iz mikrobiologicheskoy laboratorii (zav.--prof. V.N.Azbelev) otdela pishchevoy gigiyeny Instituta Pitaniya AMN SSSR, Moskva.
(FOOD POISONING, bacteriology,
Proteus, serol.aspects in determ.)
(PROTEUS INFECTIONS,
food pois.,serol. aspects in determ.)

BABUSENKO, A.M.; VESELOV, A.Ya.

Antimicrobic characteristics of the essential oils of some plants. Trudy Inst. mikrobiol. i virus. AN Kazakh. SSR 5:26-31 '61. (MIRA 15:4)

(Essences and essential oils) (Materia medica, Vegetable)

BABUSENKO, A. M.

USSR/Pharmacology. Pharmacognosy. Toxicology - Medicinal Plants. T-5

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 71738

Author : Babusenko, A.M., Yurchenko, M.A., Popenko, A.K.
Inst :
Title : Phytocidal Activity of Some Wild Garlics.

Orig Pub : Uch. zap. kazakhsk. un-ta, 1956, 21, 24-30

Abstract : The phytocidal activity of 6 species of Allium, (A. longicuspis Rgl., A. obligum L., A. caesium Shrenk., A. decepiens Fish.; A. sativum L. and A. porrum L.) was studied. The activity was established by Prof. B.P. Tokin's method by "steaming" for one hour of a freshly planted culture of microorganisms in a Petri dish. It was shown that the volatile fractions and the juice of all tested species of allia posess bacteriocidal properties towards gram-positive and gram-negative microorganisms. The most powerful phytocides appear to be A. longicuspis and A. obligum. The maximal activity of the

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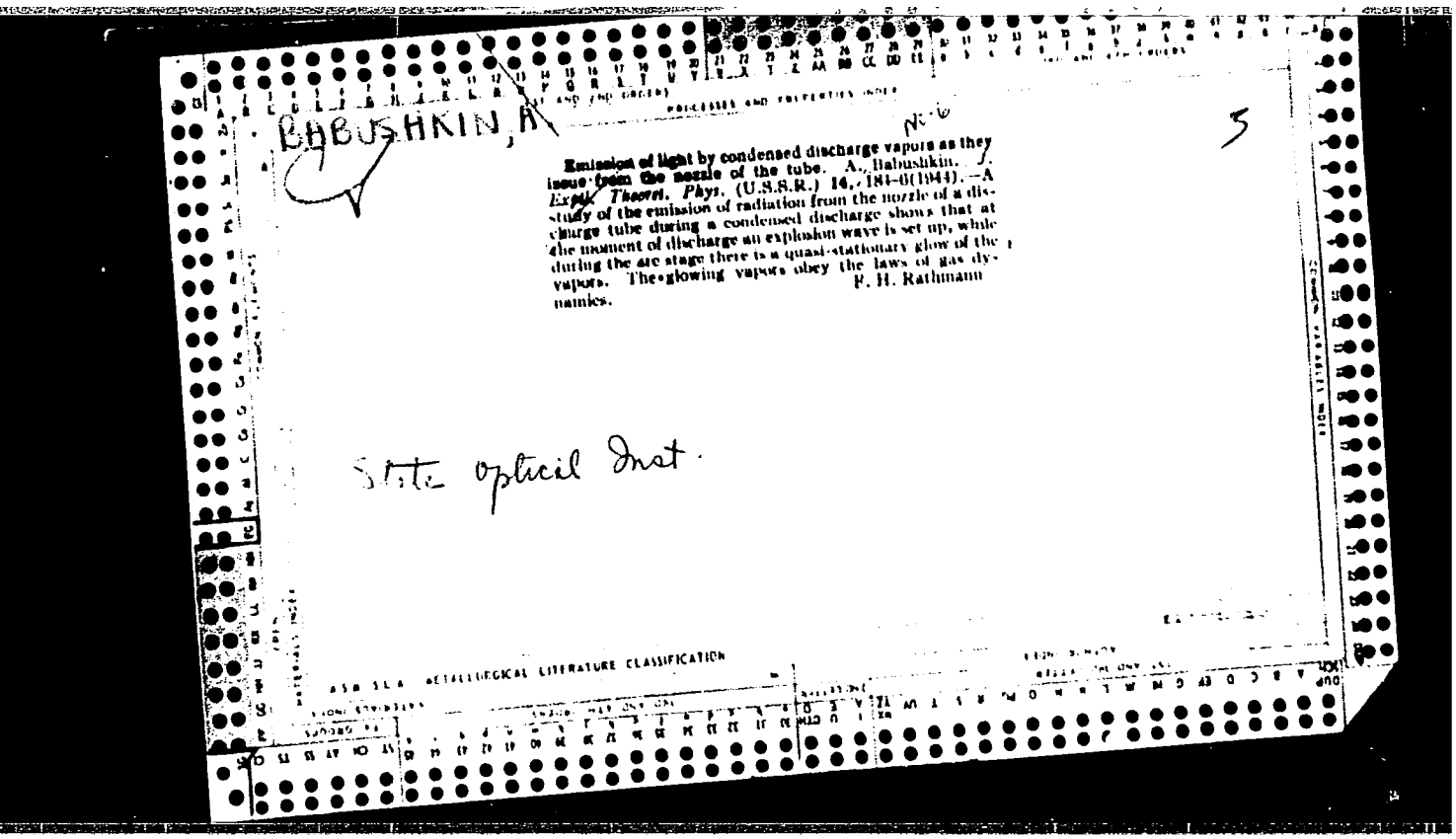
Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 71738

allia is shown up to the moment of the plant's quiescence. During the quiescent period up to the growth period the garlic's activity changes little, but from the moment of growth its activity increases greatly.

DUBYANSKIY, V.M.; BABUSENKO, I.D.; TARKHOV, V.M.

New technological plan for mining thin coal seams using a cable unit. Trudy NPI 101:185-201 '60. (MIRA 15:5)
(Coal handling machinery)

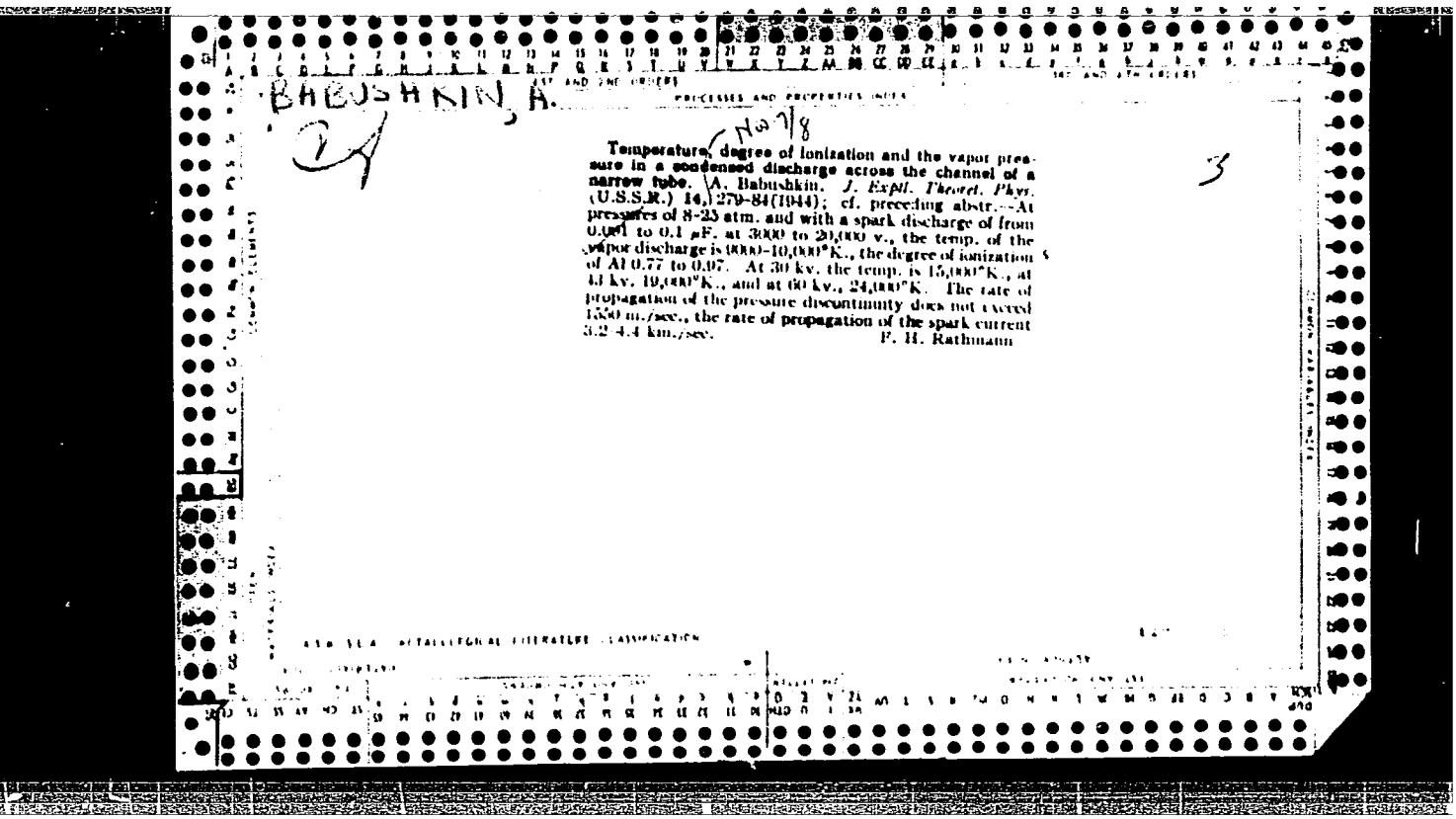


BABUSHKIN, A

Emission of light by condensed discharge vapors as they issue from the nozzle of the tube. A. Babushkin. *J. Exptl. Theoret. Phys.* (U.S.S.R.) 14, 181–6(1944).—A study of the emission of radiation from the nozzle of a discharge tube during a condensed discharge shows that at the moment of discharge an explosion wave is set up, while during the arc stage there is a quasi-stationary glow of the vapors. The glowing vapors obey the laws of gas dynamics. P. H. Rathmann

State Optical Inst.

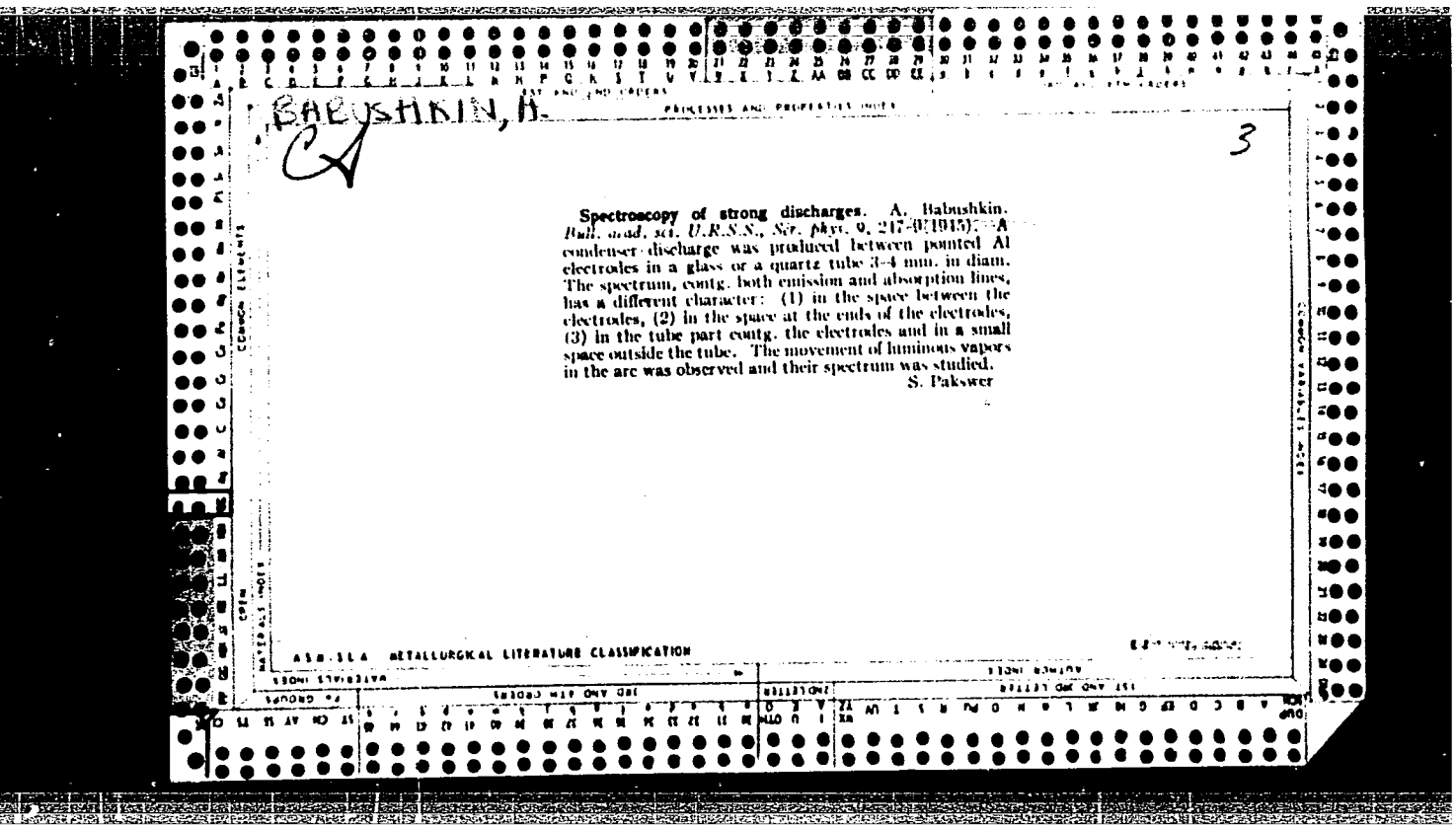
ASTIA METALLURGICAL LITERATURE CLASSIFICATION



BABUSHKIN, A.

Temperature, degree of ionization and the vapor pressure in a condensed discharge across the channel of a narrow tube. A. Babushkin. *J. Exptl. Theoret. Phys.* (U.S.S.R.) 14, 279-84(1944); cf. preceding abstr.—At pressures of 8-25 atm. and with a spark discharge of from 0.001 to 0.1 μF. at 3000 to 20,000 v., the temp. of the vapor discharge is 8000–10,000°K., the degree of ionization of Al 0.77 to 0.97. At 30 kv. the temp. is 15,000°K., at 45 kv. 19,000°K., and at 60 kv., 24,000°K. The rate of propagation of the pressure discontinuity does not exceed 1550 m./sec., the rate of propagation of the spark current 3.2–4.4 km./sec.

P. H. Rathmann



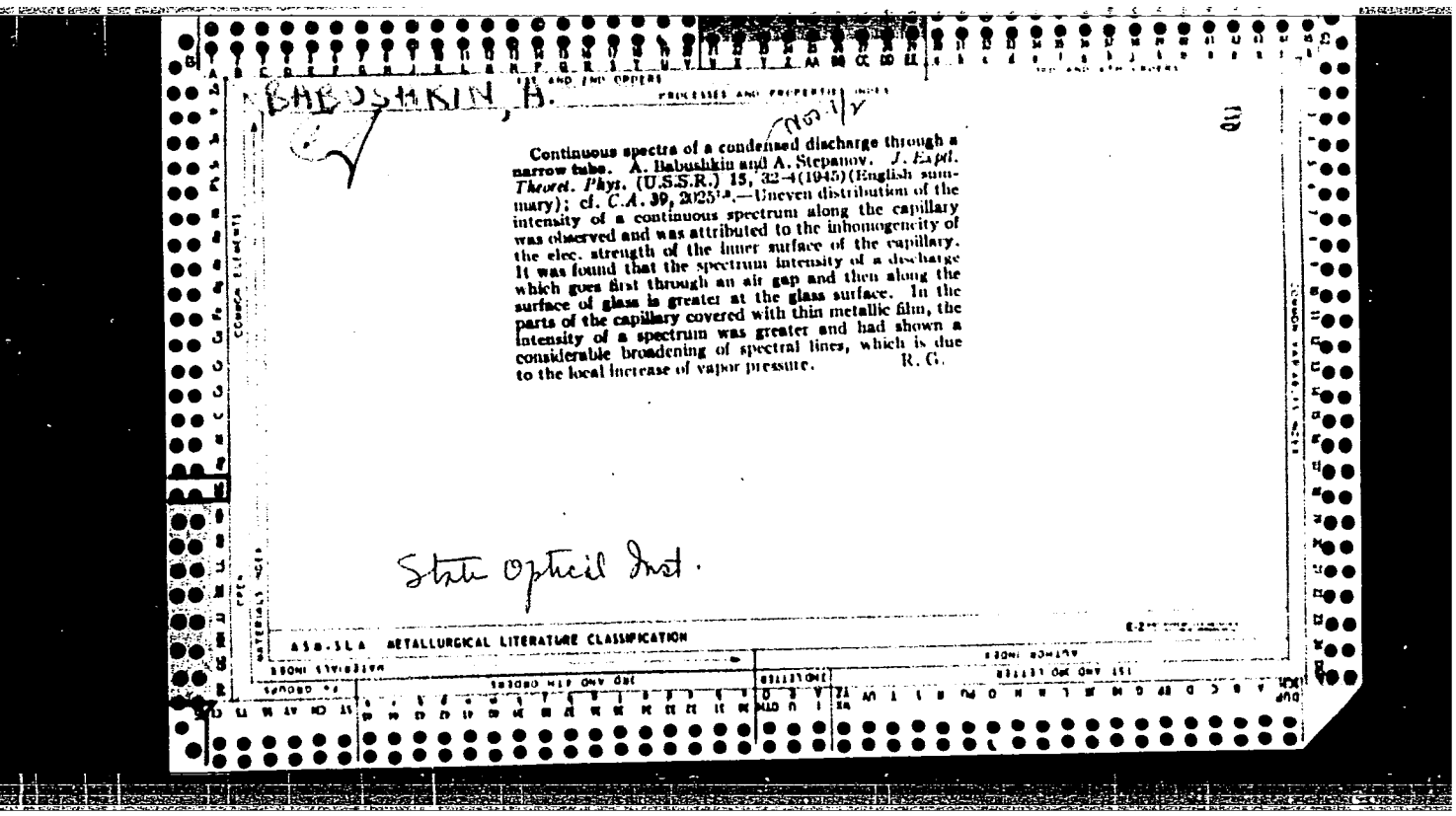
BABUSHKIN, A.

CA

3

Spectroscopy of strong discharges. A. Babushkin. *Bull. acad. sci. U.R.S.S., Sér. phys.* 9, 217-9(1945). A condenser discharge was produced between pointed Al electrodes in a glass or a quartz tube 3-4 mm. in diam. The spectrum, contg. both emission and absorption lines, has a different character: (1) in the space between the electrodes, (2) in the space at the ends of the electrodes, (3) in the tube part contg. the electrodes and in a small space outside the tube. The movement of luminous vapors in the arc was observed and their spectrum was studied.
S. Pakswer

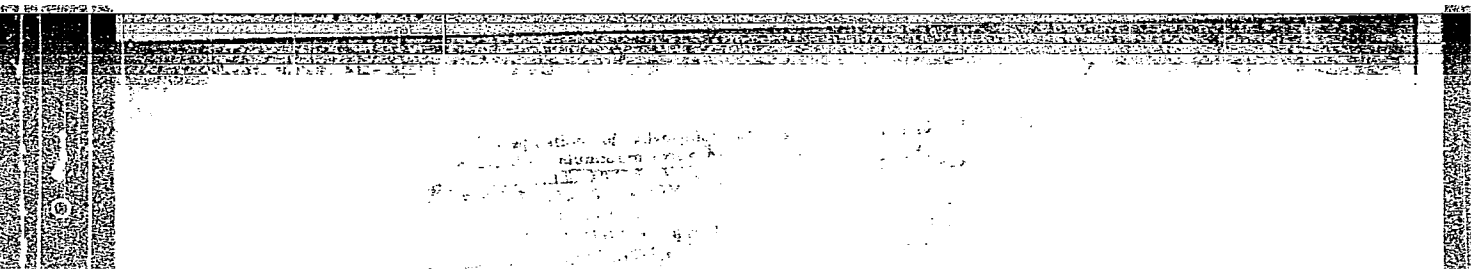
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



BABUSHKIN, A.

Continuous spectra of a condensed discharge through a narrow tube. A. Babushkin and A. Stepanov. *J. Expl. Theoret. Phys.* (U.S.S.R.) 15, 32-4(1945)(English summary); cf. *C.A.* 39, 2025[1].—Uneven distribution of the intensity of a continuous spectrum along the capillary was observed and was attributed to the inhomogeneity of the elec. strength of the inner surface of the capillary. It was found that the spectrum intensity of a discharge which goes first through an air gap and then along the surface of glass is greater at the glass surface. In the parts of the capillary covered with thin metallic film, the intensity of a spectrum was greater and had shown a considerable broadening of spectral lines, which is due to the local increase of vapor pressure. R. G.

State Optical Inst.



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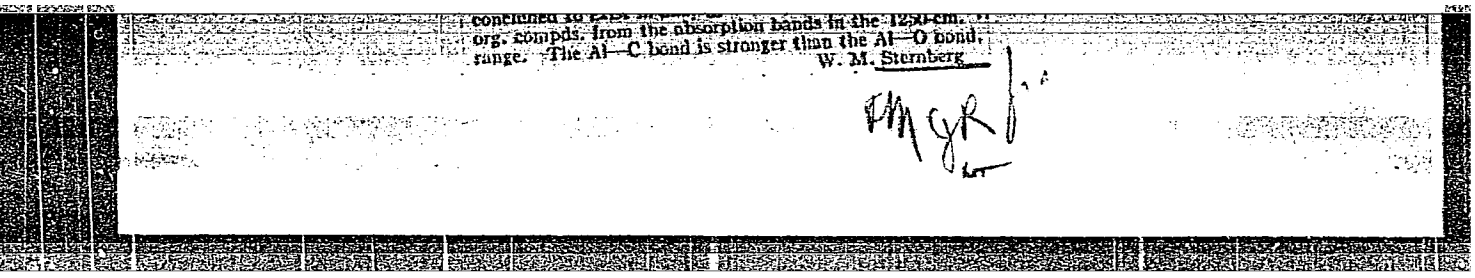

concerned to [illegible] org. compds. from the absorption bands in the 1250-cm. range. The Al—C bond is stronger than the Al—O bond.
W. M. Sternberg

BABUSHKIN, A. A.

Use of infrared spectroscopy in the study of adsorption and catalysis phenomena. A. A. Babushkin (M. V. Lomonosov State Univ., Moscow). Poverkhnost. Khim. ...

4

BABUSHKIN, A.A.; UVAROV, A.V.; IGNAT'YEVA, L.A.

Infrared spectroscopic analysis of the adsorption and surface reactions of ethyl and methyl alcohols on aluminum oxide. Fiz. sbor. no.3:161-167 '57. (MIRA 11:8)

1. Moskovskiy ordena Lenina i ordena Trudovogo Krasnogo Znameni gosudarstvennyy universitet im. M.V. Lomonosova i Institut fizicheskoy khimii AN SSSR.
(Ethanol--Spectra) (Methanol--Spectra) (Aluminum oxide)

BABUSHKIN, A.A.; GUSEVA, N.G.; YEMEL'YANOVA, V.M.

Infrared spectra of molecular compounds composed of boron trifluoride and various amines. Fiz. sbor. no.3:212-213 '57. (MIRA 11:8)

1. Moskovskiy ordena Lenina i ordena Trudovogo Krasnogo Znameni gosudarstvennyy universitet im. M.V. Lomonosova i Institut fizicheskoy khimii AN SSSR.

(Amine--Spectra)
(Boron fluoride--Spectra)

BABUSHKIN, A.A.; GVOZDEV, B.A.; GLAZUNOV, P.Ya.

Spectrophotometric equipment for continuous absorption analysis and for recording gas concentrations. Fiz. sbor. no.3:360-363 '57.
(MIRA 11:8)

1. Institut fizicheskoy khimii AN SSSR.
(Spectrophotometer)

PRIKHOT'KO, A.F.

24(7) P-3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Pizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Gazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

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Card 23/30

BABUSHKIN, A.A.

PHASE I BOOK EXPLOITATION SOV/3850

SOV/9-58-8(11)

Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii imeni V. I. Vernadskogo. Komissiya po analiticheskoy khimii

Spektrofotometricheskiye i kolorimetricheskiye metody analiza (Spectrophotometric and Colorimetric Methods of Analysis) Moscow, 1958. [illegible] p. [illegible] Its: Trudy, tom. 8 (11) Errata slip inserted. 5,000 copies printed.

Resp. Ed.: I. P. Alimarin, Corresponding Member, Academy of Sciences [illegible]; Ed. of Publishing House: V. M. Pashkova; Tech. Ed.: [illegible]

PURPOSE: The publication is intended for chemists, particularly analytical chemists and geochemists.

COVERAGE: This collection of 29 articles is published as Volume VIII (XI) of the Transactions of the Committee on Analytical Chemistry at the [illegible] Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, [illegible] Sciences USSR. The general subject of the volume is the [illegible] of spectrophotometric and colorimetric analysis. Individual [illegible] on the following topics may deserve special attention: the [illegible] of light absorption analysis, the sensitivity of the colorimetric methods of inorganic analysis, the basic variations of the kinetic method of analysis, spectrophotometric investigation of heteropolyacids of [illegible], a new colorimetric method of determining small quantities of [illegible], a fluorimetric method of determining uranium, spectro-photometric investigation of the behavior of oxidation-reduction indicators, a phasometric optical-acoustical method of gas analysis, and a description of an automatic spectrophotometric gas analyzer. No personalities are mentioned. References are given at the end of each article.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

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Sov/51-4-4-6/24

AUTHORS: Babushkin, A.A., Kovalev, I.F. and Yemel'yanova, V.M.

TITLE: Investigation of the Vibrational Spectra of Molecular Compounds of Boron Trifluoride with Substances Containing Nitrogen and Oxygen. I. $F_3B.NH_3$ and $F_3B.ND_3$

(Issledovaniye kolebatel'nykh spektrov molekulyarnykh soyedineniy trekhftoristogo bora s azot- i kislorod-soderzhashchimi veshchestvami. I. $F_3B.NH_3$ i $F_3B.ND_3$)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 4, pp 468-473 (USSR).

ABSTRACT: Boron trifluoride was obtained by decomposition of $C_6H_5N_2.BF_3$. Purity of boron trifluoride was checked spectrally and only SiF_4 in an amount smaller than 0.5% was found.

Molecular compounds of boron trifluoride with ammonia and deuteroammonia were obtained by condensation of ammonia (or deuteroammonia) on freezing by means of liquid nitrogen in an ether complex of boron trifluoride, $(C_2H_5)_2O.BF_3$, in a metal test tube. A white crystalline substance was obtained which was re-crystallised in water (or heavy water) or in acetone. In re-crystallisation of $F_3B.ND_3$ from acetone, a

Investigation of the Vibrational Spectra of Molecular Compounds of Boron Trifluoride with Substances Containing Nitrogen and Oxygen. I. $F_3B.NH_3$ and $F_3B.ND_3$

replacement of deuterium by hydrogen occurred and a mixture of compounds with different degrees of replacement of hydrogen, by deuterium was obtained. This mixture was denoted by the formula $F_3B.NH_iD_k$, where i and k may have the values 0, 1, 2, 3 and $i + k = 3$. The spectra were recorded using a spectrometer IKS-11 in the region from 2.5 to 15 μ. To avoid absorption by atmospheric water vapour and carbon dioxide, nitrogen was passed through the spectrometer. Samples were prepared by placing a layer of paste of the substance studied between two plates of rock-salt or by placing a dry layer of the substance between the same plates. Raman scattering spectrum of an aqueous solution of the molecular compound $F_3B.NH_3$ was recorded by means of a spectrograph ISP-51 with a photoelectric attachment UF-320. The infra-red absorption spectra of $F_3B.NH_3$ and $F_3B.ND_3$ are shown in Figure 1. Calculations of the force field and vibrational spectra were based on molecular models with C_{3v} symmetry for $F_3B.NH_3$ and $F_3B.ND_3$ (Figure 2)

Investigation of the Vibrational Spectra of Molecular Compounds of Boron Trifluoride with Substances Containing Nitrogen and Oxygen. I. $F_3B.NH_3$ and $F_3B.ND_3$

and C_s symmetry for $F_3B.NH_2D$ and $F_3B.NHD_2$. To calculate the force constants, the authors used their own experimental results on the Raman and infra-red spectra of $F_3B.NH_3$ and $F_3B.ND_3$ (see table on p 471). The observed frequencies for the mixture denoted by $F_3B.NH_iD_k$ were used to check the calculations. The force field for $F_3B.NH_3$ was calculated by the method of Vol'kenshteyn, Yel'yashevich, Stepanov (Ref 18) and Mayants (Ref 13) using "spectroscopic masses" for hydrogen and deuterium. From 49 force constants, which determine the potential function 18 were taken to be equal to zero. The calculated force constants are given at the top of p 473. They were calculated using the BESM computer of the Ac.Sc. USSR. The table on p 471 shows that there is good agreement between the observed frequencies and those obtained by calculation using the force constants. The

 authors also calculated the coefficients of induction which

Investigation of the Vibrational Spectra of Molecular Compounds of Boron Trifluoride with Substances Containing Nitrogen and Oxygen. I. $F_3B.NH_3$ and $F_3B.ND_3$

are given in the middle of p 473. The authors thank A.I. Shatenshteyn for supply of deuterated ammonia and K.I. Podlovchenko for help in carrying out the calculations on the computer. There are 2 figures, 1 table and 19 references, 6 of which are Soviet, 8 in English, 2 German, 1 French, 1 translation of Western work into Russian and one other.

ASSOCIATION: Institut fizicheskoy khimi AN SSSR (Institute of Physical Chemistry, Ac.Sc. USSR), Saratovskiy pedagogicheskiy institut (Saratov Pedagogical Institute) and Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: June 14, 1957

Card 4/4 1. Boron florides--Spectra

SOV/51-5-3-5/21

AUTHORS: Babushkin, A.A., Gribov, L.A., Guseva, N.G. and Yemel'yanova, V.M.

TITLE: Investigation of the Vibrational Spectra of the Molecular Compounds of Boron Trifluoride with Nitrogen and Oxygen-Containing Substances. (Issledovaniye kolebatel'nykh spektrov molekulyarnykh soyedineniy trekhftoristogo bora s azot- i kislorodsoderzhashchimi veshchestvami). II. On the Structure of the Molecular Compounds of Boron Trifluoride with Methanol, Ethanol and Water (II. O stroyenii molekulyarnykh soyedineniy trekhftoristogo bora s metanolom, etanolom i vodoy).

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 3, pp 256-263 (USSR)

ABSTRACT: Part I is given in Ref 1. Boron trifluoride forms two types of molecular compounds with water and the two alcohols. In one type there is one molecule of water or alcohol for each molecule of BF_3 (1:1) while in the other type there are two molecules of water or alcohol for each BF_3 molecule (1:2). The authors obtained the infrared absorption spectra of molecular compounds of both types: $BF_3.H_2O$, $BF_3.2H_2O$, $BF_3.CH_3OH$, $BF_3.2CH_3OH$, $BF_3.C_2H_5OH$, $BF_3.2C_2H_5OH$. The measurements were made in two spectral regions: the region of fundamental valence vibrations of OH and CH (2000-3800 cm^{-1}) and the

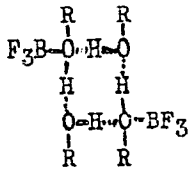
Card 1/3

Investigation of the Vibrational Spectra of the Molecular Compounds of Boron Trifluoride with Nitrogen and Oxygen-Containing Substances. II. On the Structure of the Molecular Compounds of Boron Trifluoride with Methanol, Ethanol and Water.

region of absorption of their first harmonics (5000-7300 cm^{-1}). The measurements in the harmonic region were necessary in order to avoid confusion due to possible decomposition of certain (1:1) molecular compounds. The measurements were made using an IKS-11 spectrometer. In the region 3500-3800 cm^{-1} a two-beam IKS-2 spectrometer was also used. For measurements on corrosive liquids a special cell was made of teflon (Fig 1). This was used to measure the absorption in the fundamental frequency region. In measurements of absorption in the harmonic region a glass cell was used. BF_3 was obtained by the method described in Ref 1. Synthesis of molecular compounds was carried out in vacuum. A known amount of the additive was placed into the reaction vessel and frozen. The vessel was pumped out and then filled with an appropriate amount of BF_3. Fig 2 shows the absorption spectra of the molecular compounds $BF_3.2CH_3OH$, $BF_3.2C_2H_5OH$, $BF_3.2H_2O$ (curves 1, 2 and 3 respectively) in the region 2400-3800 cm^{-1}. Fig 3 shows the absorption spectra of all the six molecular compounds studied, in the region 5700-7500 cm^{-1}. No absorption bands were found which could be

Investigation of the Vibrational Spectra of the Molecular Compounds of Boron Trifluoride with Nitrogen and Oxygen-Containing Substances. II. On the Structure of the Molecular Compounds of Boron, Trifluoride with Methanol, Ethanol and Water.

ascribed to valence vibrations of OH of the oxonium ion. The experimental results lead to the conclusion that the (1:1) molecular compounds are polymerically associated by means of the hydrogen bond, and the (1:2) complexes are dimers with the following structure



There are 3 figures and 12 references, 3 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR; Moskovskiy gosudarstvennyy universitet, fizicheskiy fakul'tet, kafedra optiki (Institute of Physical Chemistry, Academy of Sciences of the U.S.S.R.; Moscow State University, Department of Physics, Chair of Optics)

SUBMITTED: October 28, 1957

Card 3/3 1. Boron fluoride compounds--Spectra 2. Infrared spectroscopy--Applications

BABUSHKIN, A.A.; GVOZDEV, B.A.; GLAZUNOV, P.Ya.

Photoelectric apparatus added to the spectrograph for the purpose of absorption analysis. Trudy kom. anal. khim. 8:258-265 '58. (MIRA 11:8)

1.Institut fizicheskoy khimii Akademii nauk SSSR.
(Absorptiometer) (Spectrograph)

AUTHORS: Babushkin, A. A., Kovalev, I. F., Yemel'yanova, V. M. SOV/48-22-9-33/40

TITLE: Spectroscopic Investigations of the Structure of Some Complex Compounds (Spektroskopicheskiye issledovaniya stroyeniya nekotorykh kompleksnykh soyedineniy)1.Molecular Compounds $F_3B.NH_3$ and $F_3B.ND_3$(1.Molekulyarnyye soyedineniya $F_3B.NH_3$ i $F_3B.ND_3$)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 9, pp 1131 - 1131 (USSR)

ABSTRACT: This is a condensation of the paper which was published under the above subtitle Nr 1 in the "Izvestiya Akademii nauk SSSR" by A.A.Babushkin. The spectra of infrared absorption and of combination dispersion of the compounds in question were recorded in the laboratory of the Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry AS USSR). The field of force and the vibration spectra were computed by I.F.Kovalev. The computations were based upon the model C_{3v} for $F_3B.NH_3$ and upon the model C_s for $F_3B.NH_2D$ and $F_3B.NHD_2$. The spectrum

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Spectroscopic Investigations of the Structure of Some Complex Compounds. 1. Molecular Compounds $F_3B.NH_3$ and $F_3B.ND_3$ SOV/48-22-9-33/40

of the two last mentioned substances served as control. The results of the computation of the vibration spectra of $F_3B.NH_3$ and of its deutero derivatives, their interpretation and that of the computation of the potential function were considered to be satisfactory. The value of the force constant of the bond B-N, which equals $4,4.10^5$ dyn cm^{-1} indicates a sufficient strength. The activity in the spectrum of combination dispersion corresponding to the vibrations of the B-N bond indicates a covalent nature of this bond.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, AS USSR)

Card 2/2

AUTHORS: Babushkin, A. A., Gribov, L. A., Guseva, N. G., Yemel'yanova, V. M. SOV/48-22-9-34/40

TITLE: Spectroscopic Investigations of the Structure of Some Complex Compounds (Spektroskopicheskiye issledovaniya stroyeniya nekotorykh kompleksnykh soyedineniy) 2. On the Structure of the Molecular Compounds of Boron Fluoride With Methanol, Ethanol and Water (2. O stroyenii molekulyarnykh soyedineniy trekhftoristogo bora s metanolom, etanolom i vodoy)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 9, pp 1131 - 1133 (USSR)

ABSTRACT: This is a condensation of the paper which was published under the above subtitle Nr 2 in the "Izvestiya Akademii nauk SSSR" by A.A.Babushkin. Boron fluoride forms two types of molecular compounds with water and alcohols: in the first type one molecule of water or of alcohol falls to one molecule of F_3B, (1:1), in the second type two molecules of water or of alcohol fall to one molecule of F_3B (1:2). At present several authors share the opinion

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with Paushkin (Ref 3) according to which the molecular compounds (1:2) can be considered to represent oxonium-type compounds: $[H_2O]^+[F_3B.OH]^-$, $[R.OH_2]^+[F_3B.OR]^-$.

Hence the structure of the molecular compounds in question cannot be regarded to be established beyond doubt. Attempts to find an absorption which is characteristic of the oxonium ion were unsuccessful. The absorption spectra in the range of the first harmonic of the OH valence oscillations (Fig 1) show a great difference between the spectra of $F_3B.1ORH$ and of $F_3B.2ORH$. As no evidence was found in the spectrum confirming the presence of the oxonium ion it can be assumed that the oxonium form is either not realized at all or that its concentration is too low. This paper presents a comparison of the wave numbers of the fundamental oscillation and of the first harmonic of the OH valence oscillations of methanol, of ethanol, and of water without association (diluted solutions and vapors)

with the frequencies which correspond to the maxima of the absorption bands (1:2). The experience gained by this comparison leads to the conclusion that these compunds are associated among themselves by means of a hydrogen bond. The wide absorption bands of the compound (1:1) are also caused by their association by means of a hydrogen binding. The difference in the band widths and in the wave numbers corresponding to their maxima can be traced back to the different process of formation of the hydrogen binding in both (1:1) and (1:2) compounds. The existence of a narrow band in the compound (1:2) is considered to be related to the association of two complexes in which four hydrogen bindings form a closed cycle structure formula (II). The absence of absorption bands which are characteristic for the terminal hydroxyl group (hydrogen binding) in the frequency range of the fundamental frequency and first harmonic of the OH valence oscillations also corroborates the existence of the structure (II). There are

Spectroscopic Investigations of the Structure of Some Complex Compounds. 2. On the Structure of the Molecular Compounds of Boron Fluoride With Methanol, Ethanol and Water SOV/48-22-9-34/40

1 figure and 3 references, 1 of which is Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR(Institute of Physical Chemistry, AS USSR)

Card 4/4

AUTHORS: Babushkin, A. A., Yukhnevich, G. V., Berezkina, Yu. V., Spitsyn, V. I. SOV/48-22-9-35/40

TITLE: Spectroscopic Investigations of the Structure of Some Complex Compounds (Spektroskopicheskiye issledovaniya stroyeniya nekotorykh kompleksnykh soyedineniy)3. Influence of Water on the Structure of Para- and Meta-Sodium-Tungstenates (3. Vliyaniye vody na stroyeniye para- i metavol'framatov natriya)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 9, pp 1134 - 1135 (USSR)

ABSTRACT: This is a condensation of the paper published under the above subtitle Nr 3 in the "Izvestiya Akademii nauk SSSR" by A.A.Babushkin . It covers the investigation of the infrared absorption spectra of paratungstenates ($5Na_2O.12WO_3$) with a composition of 28 H_2O, 19 H_2O, 9 H_2O, 4 H_2O, 2 H_2O and of water-free tungstenate. Two ranges, that of the valence- and deformation oscillations of the tungstenate ion (700 — 1700 cm^{-1}) and that range

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Spectroscopic Investigations of the Structure of Some Complex Compounds. 3. Influence of Water on the Structure of Para- and Meta-Sodium-Tungstenates SOV/48-22-9-35/40

($3000 - 3800\ cm^{-1}$) which is especially favorable for a study of the aqueous state were investigated. Besides, the absorption spectra of meta-sodium-tungstenate ($Na_2W_4O_{13}$) with a composition of 10 H_2O, 7 H_2O, 2 H_2O and of a water free meta-sodium-tungstenate were studied. A comparison of the results of the investigation of various hydrates of para- and meta-tungstenates permits a joint treatment. An immediate connection between the coordination of the water in the complex and the anion structure of the iso-poly compounds was established to exist. A modification of the water coordination at a dehydration leads to an alteration of the structure of the anion. The maintenance of a stable coordination of the water does not lead to an alterartion of the structure of the complex. There are 2 figures.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, AS USSR)

Card 2/2

5(4)

AUTHORS: Babushkin, A. A., Gribov, L. A., Gel'man, A. D.

SOV/20-123-3-22/54

TITLE: The Nature of the Bond Between the Central Atom and Some Unsaturated Molecules in Complex Platinum Compounds (O kharaktere svyazi mezhdu tsentral'nym atomom i nekotorymi nenasyshchennymi molekulami v kompleksnykh soyedineniyakh platiny)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 3, pp 461-463 (USSR)

ABSTRACT: The problem of the bond between metals and the molecule mentioned in the title was investigated in numerous papers. A respective survey is given in reference 1. According to A. D. Gel'man (Ref 2) the platinum atom represents at the same time an electron donor and acceptor. In consequence of this a covalent double bond results between the central atom and the olefin. Chatt and Duncanson (Ref 4) suggest a scheme for this bond which can be regarded as π-electron interaction. The authors do not agree to the interpretation of the spectra observed. Chatt and Duncanson (and Ref 5, according to them) conclude from their interpretation that the double bond of the

olefin is maintained also in the complex formation. The authors state, however, that the reasons for this fact are not sufficient. The purpose of their paper was therefore to perform a critical analysis of the infrared spectra of complex platinum compounds with ethylene, propylene and carbon monoxide: 1) contrary to reference 4, the frequencies in the range above 3000 cm^{-1} are a necessary but by no means sufficient proof of the maintenance of the double bond C = C in the olefin part of the complex. Due to the similarity of the electron configuration in the CH_2-group of the ethylene, ethylene oxide and cyclopropane molecules the authors suppose that the olefin is forming with platinum a compound according to the type of a triangular cyclic structure. 2) According to the above-mentioned statements it is more correct to attribute the frequencies of the ethylene and propylene complexes with platinum in the range 1490-1510 cm^{-1} to the deformation oscillation CH_2 (Ref 7a), but not to the frequency of valence oscillations of the double bond C = C. 3) The frequency of the non-plane

deformation oscillations of the CH—group is a typical feature of olefins (Ref 8). The absence of this frequency in the complex compound under consideration and the presence of 4 additional intense frequencies between 1300 and 700 cm^{-1} (as compared with the spectra of the initial addenda) proves a considerable transformation of the ethylene molecule that must be related with the transformation of the double bond C = C into a single one. 4) The above-mentioned considerations are in accordance with the data on the structure of the complex compound mentioned (Ref 9). According to these data, the ethylene molecule is vertical to the $PtCl_3$-plane and, shows with respect to the latter, nearly a symmetric position. The distance between the carbon atoms d = 1.50 Å is a value characteristic of a single bond between these atoms. 5) The analysis of the infrared spectrum of the complex compound proves that the double bond C = C in ethylene is transformed into a single one on the entrance of the platinum atom into the inner sphere. Therein the strength of the bond between

platinum and the carbon atoms is according to the order of magnitude of the strength identical with an ordinary covalent bond. 6) The statements made in points 1-3 are valid both for $K\left[PtC_2H_4Cl_3\right]H_2O$ and $K\left[PtC_3H_6Cl_3\right]\cdot H_2O$. For this reason the authors claim that the structure and nature of the formation of the propylene bond with the central atom are similar to those of ethylene with platinum. There are 10 references, 5 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

PRESENTED: July 7, 1958, by V. I. Spitsyn, Academician

SUBMITTED: June 26, 1958

BABUSHKIN, A. A.,

"Investigation of the infrared absorption spectra of some aquapoly- and heteropoly- compounds," report to be submitted for Int'l Conf on Coordination Chemistry, IUPAC, London, England, 6-11 Apr 59.

Institute of Physical Chemistry, Moscow, USSR.

5(4) SOV/78-4-4-19/44

AUTHORS: Babushkin, A. A., Yukhnevich, G. V., Berezkina, Yu. F., Spitsyn, Vikt. I.

TITLE: Investigation of the Effect of Water on the Structure of Sodium Para- tungstate and Sodium Meta-tungstate Using the Method of Infra-red Absorption Spectra (Issledovaniye vliyaniya vody na stroyeniye para- i metavol'framatov natriya metodom infrakrasnykh spektrov pogloshcheniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 823-829 (USSR)

ABSTRACT: The authors investigated the effect of water upon the structure of sodium para and meta tungstate and the type of bonding of the water in the anions of these compounds. The infra-red absorption spectra of sodium para and meta tungstate were plotted for different water contents using the IKS-1 spectrophotometer with sodium chloride and lithium fluoride prisms. The infra-red absorption spectra for sodium para-tungstate with $28H_2O$, $19H_2O$, $9H_2O$, $4H_2O$, $2H_2O$ and $0.2H_2O$ per molecule of $Na_{10}W_{12}O_{41}$ as well as the anhydrous para-tungstate were investigated. The investigation was carried out over the spectral ranges 700-1700 cm^{-1}

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and 3000-3800 cm^{-1}. For sodium para-tungstate hydrates in the transition from $19H_2O$ to $9H_2O$ a marked change in the structure of the coordination water and in the structure of the anions occurred. The structures of the hydrates of the sodium meta-tungstate remained unchanged. Using spectroscopic methods and isotope exchange of hydrogen against deuterium it was found that in the sodium para-tungstate with $28H_2O$ three forms of the coordination water exist. One of these forms is present as the hydroxyl group, which is bound directly to the tungsten atom. Likewise in the hydrates of the sodium meta-tungstate there is a form of the coordination water as the hydroxyl group bound directly to the tungsten atom. Infra-red absorption spectra of sodium meta-tungstate were plotted for 10.7 and $2H_2O$ and the anhydrous sodium meta-tungstate in the ranges of 3000-3800 cm^{-1} and 1300-600 cm^{-1}. These are shown in figures 4 and 5. These spectra show that there is no difference between the absorption spectra of these hydrates of sodium meta-tungstate.

Investigation of the Effect of Water on the Structure of Sodium Para-tungstate and Sodium Meta-tungstate Using the Method of Infra-red Absorption Spectra

SOV/78-4-4-19/44

No specific absorption was found for the anhydrous sodium meta-tungstate in the range 3000-3800 cm^{-1}. The differences in the optical densities of the various hydrates are shown in a table. A further table gives the wave numbers (cm^{-1}) of the absorption maxima of the hydrates of sodium meta-tungstate. There are 5 figures, 2 tables, and 8 references, 4 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

SUBMITTED: January 13, 1958

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5(2)

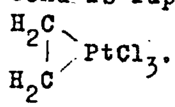
SOV/78-4-7-12/44

AUTHORS: Babushkin, A. A., Gribov, L. A., Gel'man, A. D.

TITLE: On the Character of the Bond Between Central Atom and Olefine in Complex Compounds of Platinum (O kharaktere svyazi mezhdu tsentral'nym atomom i olefinom v kompleksnykh soyedineniyakh platiny)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 7, pp 1542-1547 (USSR)

ABSTRACT: The present paper analyzes the infrared spectra of compounds of platinum with ethylene and propylene. Table 1 gives the frequencies for $K[C_2H_4PtCl_3]\cdot H_2O$ and $K[C_3H_6PtCl_3]\cdot H_2O$. It is concluded from the spectra that in both compounds the carbon double bond is ruptured and a triple ring is formed in ethylene



. This is confirmed by a comparison with the spectra of ethylene oxide and ethylenimine. The interpretation of frequency within the range of 1500 cm^{-1} as a valence shrinkage of the C=C-bond, as given by J. Chatt and L. A. Duncanson (Ref 9), is therefore considered to be improbable. Figure 1

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On the Character of the Bond Between Central Atom and Olefine in Complex Compounds of Platinum

shows the infrared absorption spectrum of propylene and of the propylene-platinum compound. There are 1 figure, 1 table, and 24 references, 12 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

SUBMITTED: March 25, 1958

YUKHNEVICH, G.V.; BABUSHKIN, A.A.; KOLLI, I.D.

Influence of water on the structure of potassium silicotungstate. Zhur.neorg.khim. 5 no.5:1176-1177 My '60. (MIRA 13:7)

1. Institut fizicheskoy khimii Akademii nauk SSSR. Kafedra neorganicheskoy khimii khimicheskogo fakul'teta Moskovskogo gosudarstvennogo universiteta.
(Potassium silicotungstate)

BABUSHKIN, Aleksandr Afanas'yevich, dots.; BAZHULIN, Pavel Alekseyevich, prof.; KOROLEV, Fedor Andreyevich, prof.; LEVSHIN, Leonid Vadimovich, prof.; PROKOF'YEV, Vladimir Konstantinovich, prof.; STRIGANOV, Arkadiy Romanovich, doktor fiziko-matem. nauk; GOL'DENBERG, G.S., red.; GEORGIYEVA, G.I., tekhn. red.

[Spectrum analysis methods]Metody spektral'nogo analiza. [By] A.A.Babushkin i dr. Pod red. V.L.Levshina. Moskva, Izd-vo Mosk. univ., 1962. 508 p. (MIRA 16:2)
(Spectrum analysis)

BABUSHKIN, A.A.; GOLIKOVA, V.S.; KRYLOVA, L.M.; KIMEL'FEL'D, Ya.M.; ZUBOV, P.I.

Use of infrared spectrometry in studying the kinetics of the formation of polymer coatings. Izv. AN SSSR. Ser. fiz. 27 no.7:978-980 '63. (MIRA 16:8)

1. Institut fizicheskoy khimii AN SSSR.
(Solid film) (Spectrum, Infrared)

GABUSHKIN, A. A.; MEDNIKOV, A. K.; STROYKIN, N. I.

"Measurements of the Energy Loss of Alpha Particles in Thin Layers of Gold on Semi-Conductor Spectrometers."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

ACCESSION NR: AP4041037 S/0120/64/000/003/0142/0145

AUTHOR: Babushkin, A. A.; Gorin, A. I.

TITLE: Auxiliaries to the IKS-14 spectrophotometer for investigating the spectra of very thin films

SOURCE: Pribory* i tekhnika eksperimenta, no. 3, 1964, 142-145

TOPIC TAGS: spectrophotometer, IKS-14 spectrophotometer, infrared spectrum, photometric wedge

ABSTRACT: Auxiliary devices to the 2-beam IKS-14 spectrophotometer necessary for recording the infrared spectra of monomolecular films are briefly described. A multipass cell comprises two pairs of flat mirrors, each pair reflecting the beam 11 times; thus, the light passes the test film 22 times. The standard 4-tooth "comb" (photometric wedges) was replaced with a single wedge which increased the sensitivity to low optical densities fourfold. An experiment

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ACCESSION NR: AP4041037

corroborated the fact that the linear relation between the wedge travel and the transmission remained intact. A potentiometer bridge of 0.03% resolution was provided for extending the recorder scale. Records of NH_3 and Ca stearate spectra illustrate the gain in sensitivity. Orig. art. has: 4 figures.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry, AN SSSR)

SUBMITTED: 08Jul63 ENCL: 00

SUB CODE: GP NO REF SOV: 000 OTHER: 003

Card 2/2

L 6667-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL/SSD/AFWL/AS(mp)-2
WW/RM

ACCESSION NR: AP4042690 S/0076/64/038/007/1843/1845

AUTHOR: Babushkin, A. A. 61 59

TITLE: A new method for investigation of surface properties of solids.

SOURCE: Zhurnal Fizicheskoy khimii, v. 38, no. 7, 1964, 1843-1845

TOPIC TAGS: infrared spectrophotometry, monolayers, adsorption, chemical structure

ABSTRACT: In this work it was necessary to improve a serial type spectrophotometer IKS-14 in order to record infrared (IR) spectra of monolayers. It was necessary to use special cells with multiple passage of light flux through the investigated thin film of substance. The set-up consisted of two plane mirrors located parallel to each other and at 120 C with respect to the axis of the light path. An additional system of mirrors was used to foci the source image into the plane of the correcting prism of the photometer. An analogous optical system was placed in the channel of the comparison beam. The investigated substance was placed on the mirror surfaces of two plane mirrors. The light beam was reflected eleven times from the surfaces of these mirrors and, consequently, it passed through the investigated substance 22 times. This enabled decreasing of the thickness of the

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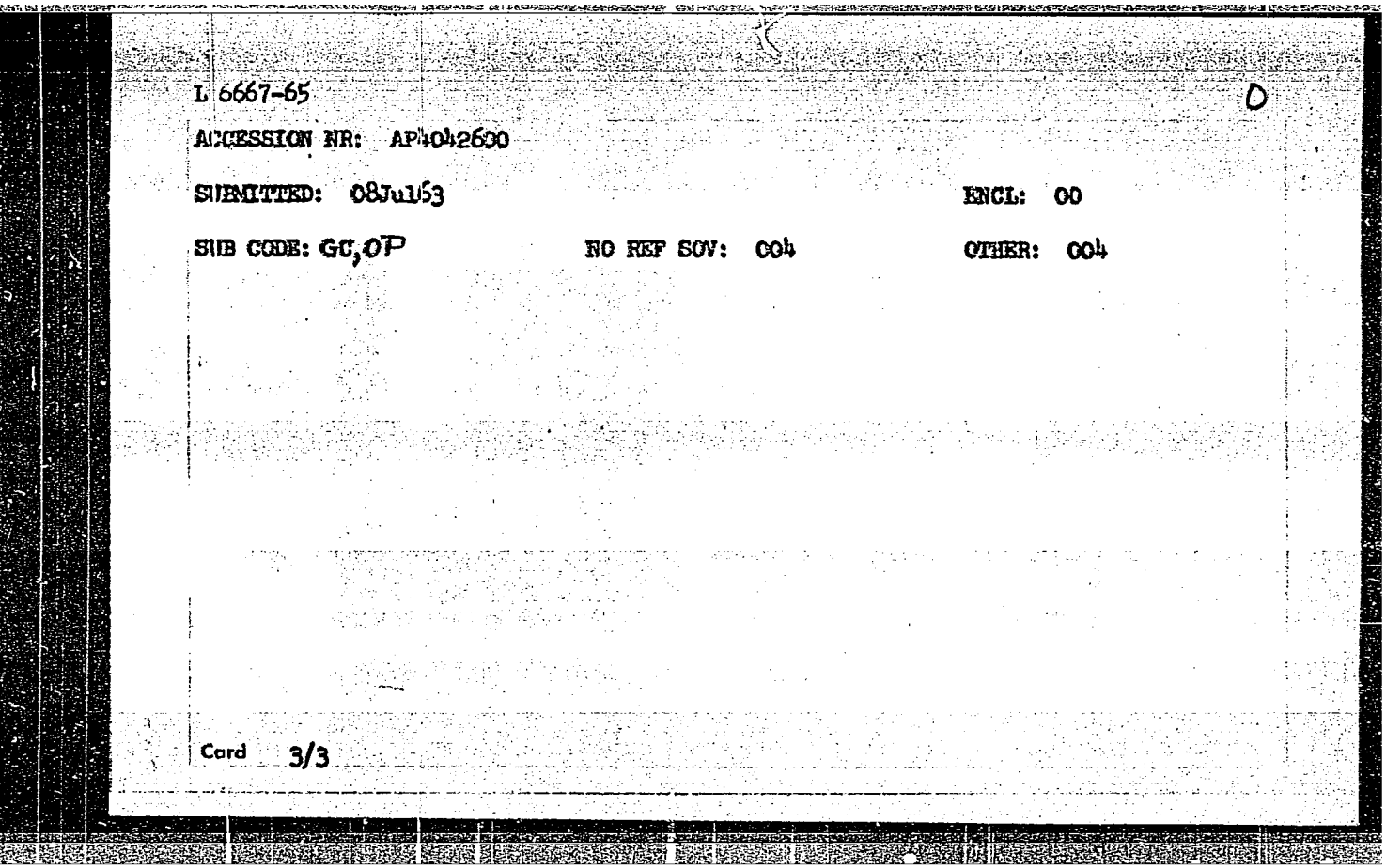
specimen, necessary for recording of the spectrum, by two orders of magnitude, down to a monolayer. The mirrors on which monolayers were placed were produced by thermal deposition of metal in a relatively low vacuum (10^{-4} mm). Consequently, the metal had oxide film. The oxide film on aluminum reaches a thickness of 45 A and it does not increase, while on copper the oxide film increases with time, but it is still of the same order of magnitude. It consists primarily of cuprous oxide. The absorption by these oxide films occurs in the long wavelength region of the spectrum (>7 microns). In this work investigation was made of the IR spectra of monolayers of different substances (methylmethacrylate, methylmethacrylate in CCl_4, hexamethyleneimine-3,5-dinitrobenzoate) on the mirror surfaces of metals. This method permits study of the zone structure of semiconductors and changes within such zones during introduction of impurities or during adsorption of different substances. It is concluded that the use of this method may be extended if on metal surfaces one places a very thin film of another substance and studies its interaction with the third substance. Orig. art. has: 2 figures.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry Academy of Sciences SSSR)



L 6667-65

ACCESSION NR: AP4042690

SUBMITTED: 08Jul63 ENCL: 00

SUB CODE: GC,OP NO REF SOV: 004 OTHER: 004

Card 3/3

BABUSHKIN, A.A. (Moskva); KRYLOVA, L.M. (Moskva); GORIN, A.I. (Moskva)

Interpretation of the infrared absorption spectra of formaldehyde in aqueous solution. Zhur. fiz. khim. 38 no.10:2361-2366 O '64. (MIRA 18:2)

1. Institut fizicheskoy khimii AN SSSR.

BABUSHKIN, A.A.; KRYLOVA, L.M. (Moskva)

Interpretation of the infrared spectra of water-soluble phenol-formaldehyde resin. Zhur. fiz. khim. 38 no.10:2367-2371 O '64. (MIRA 18:2)

1. Institut fizicheskoy khimii AN SSSR.

L 23056-65 EWT(m)/EPF(c)/EPR/EWP(j) Pc-4/Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP4047985 S/0076/64/038/010/2462/2465

AUTHOR: Nepomnyashchiy, A. I.; Babushkin, A. A.; Blagonravova, A. A.; Gavrilina, S. A.

TITLE: Investigation of the process of curing the diglycidyl ether of diphenylolpropane by means of boron trifluoxide etherate

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 10, 1964, 2462-2465

TOPIC TAGS: diphenylolpropane derivative, curing, polymerization, boron trifluoride etherate, reaction mechanism

ABSTRACT: The reaction mechanism of the curing of the diglycidyl ether of diphenylolpropane with $BF_3 \cdot O(C_2H_5)_2$ was studied spectrophotometrically. The curing of the material, i.e., the film-forming reaction, was followed by measuring the optical density of the IR absorption bands characteristic of the ether oxirane ring, and of the ether and the hydroxyl bonds. Studies were made running the reactions for 1 hour at 30C using 1% catalyst. The reaction was characterized by a decrease in the number of epoxy groups and an increase in the ether and hy-

Card 1/2

L 23054-65
ACCESSION NR: AP4047985

droxyl groups. Thus the polymerization mechanism included the opening of the oxirane ring to form ether bonds as the polymer chain length increased, and the formation of a network structure. The curing rate almost reached its maximum of 58% 30 minutes after the start of the reaction; the increased viscosity of the system limited the rate of diffusion of the reactive components. Orig. art. has: 4 figures

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii (Academy of Sciences, SSSR, Institute of Physical Chemistry)

SUBMITTED: 04Sep63 ENCL: 00

SUB CODE: GC, OC NO REF SOV: 004 OTHER: 002

Card 2/2

L 41179-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM S/0076/64/038/012/2796/2799
ACCESSION NR: AP5002571

AUTHOR: Babushkin, A.A.; Krylova, L.M.

TITLE: A study of the formation of water-soluble phenol-formaldehyde resin film on a solid base

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 12, 1964, 2796-2799

TOPIC TAGS: resin film, water soluble resin, film formation, infrared spectroscopy, optical density, phenol formaldehyde resin

ABSTRACT: A-stage water-soluble phenol-formaldehyde resins, synthesized by the GIPI-4 method, were deposited on polished sodium chloride plates or on mirror-bright aluminum surfaces in an infrared spectroscopic analysis of the physical and chemical processes occurring during the formation of resin film. The authors present semi-qualitative comparisons of the optical densities of the individual absorption bands. Spectral characteristics were also recorded for the various stages in the formation of a film, in order to study processes accompanying the solidification of a film. Dispersed particle coagulation was noted at approximately 100C. Coalescence resulting in the formation of a solid film took place at about 160C. Phenol alcohols bond rapidly at 100C

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L 41179-65

ACCESSION NR: AP5002571

3

and bridges of the $-CH_2-O-CH_2-$ or $-CH_2-O-CH_2-OCH_2-$ type form between the phenol links. Heating to 160C results in conversion of the latter type of bridges into the former, as well as incipient decomposition of $-CH_2-O-CH_2-$ bridges related to the formation of quinonomethides. Similar chemical conversions, the rates of which were governed by temperature, were established for other temperature environments. "The authors express their gratitude to O.A. Koresheva for her assistance and to S.M. Meshcheryakova, who familiarized them with the techniques of synthesizing resins of this type". Orig. art. has: 1 figure and 1 formula.

ASSOCIATION: Institut fizicheskoy khimii, Akademiya nauk SSSR (Physical chemistry institute, Academy of sciences, SSSR)

SUBMITTED: 08Jul63 ENCL: 00 SUB CODE: GC, MT

NO REF SOV: 004 OTHER: 000

me

Card 2/2

MEDNIKOV, A.K.; BABUSHKIN, A.A.

Silicon surface-barrier alpha-detectors. Prib. i tekh. eksp. 9 no.3:55-56 My-Je '64 (MIRA 18:1)

1. Institut yadernoy fiziki AN KazSSR.

L 19567-65 EWT(l)/EWT(m)/EEC(b)-2 Pq-4 DIAAP/IJP(c) AEDC(b)/SSD(c)/
APGC(b)

ACCESSION NR: AP4047464 S/0120/64/000/005/0087/0092

AUTHOR: Mednikov, A. K.; Stroykin, N. I.; Babushkin, A. A.

TITLE: The "window" in semiconductor spectrometers of charged particles

SOURCE: Pribory* i tekhnika eksperimenta, no. 5, 1964, 87-92

TOPIC TAGS: surface barrier detector, nuclear radiation detector, charged particle detector, spectrometer, semiconductor spectrometer, charged particle semiconductor spectrometer

ABSTRACT: The results of an investigation of the properties of surface-barrier silicon detectors of nuclear radiation are discussed. The investigated detectors were made of n-type silicon with resistivities of 250—600 ohm·cm and had working areas of 10 and 25 mm^2. Gold or Al, deposited directly on the surface of the charged-particle detector, served as the detector window. Nuclear radiation was provided by α-particles from ThC' and ThC", Po^{210}, and Po^{239} sources. The amplitude resolution and the charge liberated by the α-particle were measured by a system consisting of a preamplifier, a differential

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discriminator, and a scaler. The preamplifier consisted of a charge-sensitive stage, a separating cathode follower, an amplifying stage, and an output cathode follower. The voltage pulse at the preamplifier output was proportional to the charge collected in the detector following ionization by an α-particle. The proportionality constant was determined by the parameters of the amplifier and did not depend on the capacitance of the detector. From a detailed analysis of the experimental data obtained, it was concluded that: 1) the amplitude resolution of surface-barrier detectors depends on the thickness of the window, and, therefore, during the deposition of Au, the thickness of the front contact should not exceed 0.1 μ; 2) for the registration of higher-energy particles, the use of direct Au or Al deposits is limited because of the deterioration of the amplitude resolution; 3) the use of surface-barrier detectors permits measurement of α-particle energy losses during the passage of the particles through fine layers; 4) as a result of such measurements, the mean excitation energy of the Au atoms was found to equal approx. 900 eV, a figure which agrees with earlier findings. Orig. art. has: 7 figures, 8 formulas, and 1 table.

L 19567-65
ACCESSION NR: AP4047464

ASSOCIATION: Institut yadernoy fiziki AN KazSSR (Institute of Nuclear Physics, AN KazSSR)

SUBMITTED: 14Nov63 ENCL: 00 SUB CODE: EC, NP

NO REF SOV: 005 OTHER: 011

Card 3/3

L 35351-66 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG/JH
ACC NR: AR6017799 SOURCE CODE: UR/0058/66/000/001/A053/A054

AUTHOR: Babushkin, A. A.; Mednikov, A. K.; Stroykin, N. I.

TITLE: "Window" in a semiconductor spectrometer of charged particles

SOURCE: Ref. zh. Fizika, Abs. 1A468

REF SOURCE: Tr. 6-y Nauchno-tekhn. konferentsii po yadern. radioelektron. T. 1. M., Atomizdat, 1964, 12-20

TOPIC TAGS: radiation spectrometer, semiconductor barrier, charged particle, radiation detector, surface property, Alpha particle reaction

ABSTRACT: The authors investigated experimentally the influence of the thickness of the "window" (thickness of matter in which the nonregistered losses of particle energy occur) of a surface-barrier detector (SBD) on its characteristics. The SBD's used in the experiment were made of n-type silicon with resistivity ~250 - 600 ohm-cm and working areas 10 and 25 mm^2. The detector "window" was gold or aluminum deposited directly on the surface of the finished detector by evaporation in vacuum. The amplitude resolution was determined, and also the dependence of the charge produced by the charged particles in the sensitive region of the detector on the reverse bias. Alpha particles were employed for the nuclear radiation. The amplitude resolution and the charge were measured with apparatus consisting of a preamplifier, differential discriminator (type AADO-1), and a scaler (type PS-10,000). On the basis of the experimental results the following conclusions are drawn: 1) The amplitude resolution of

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L 35351-66
ACC NR: AR6017799

the SBD depends on the thickness of the "window"; 2) the use of gold or aluminum screens deposited directly on the surface of the detector, to be able to register particles with higher energies, is limited by the deterioration of the amplitude resolution; 3) the SBD can be used with very simple apparatus to determine the energy loss of an alpha particle passing through thin layers of matter. L. S. [Translation of abstract]

SUB CODE: 18 , 09

Card 2/2

BABUSHKIN, A.A.; MEDNIKOV, A.K.

Preamplifier for semiconductor detectors of nuclear radiation.
Prib. i tekh.eksp. 10 no.5:88-91 S-O '65.
(MIRA 19:1)

1. Institut yadernoy fiziki AN Kazakhskoy SSR, Alma-Ata.
Submitted August 11, 1964.

L [illegible]-67 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6019916 SOURCE CODE: UR/0275/66/000/002/B036/B036

AUTHOR: Babushkin, A. A.; Mednikov, A. K.; Stroykin, N. I.

TITLE: "Window" in a semiconductor spectrometer for charged particles

SOURCE: Ref. zh. Elektronika i yeye primeneniye, Abs. 2B289

REF SOURCE: Tr. 6-y nauchno-tekhn. konferentsii po yadern. radioelektron. T. I. M., Atomizdat, 1964, 12-20

TOPIC TAGS: radiation spectrometer, semiconductor research, nuclear research, particle physics, Alpha particle detector, CHARGED PARTICLE

ABSTRACT: The effect of the "window" thickness (layer of the substance in which unregistered losses in particle energy occur) of the surface-barrier detector (PBD) on its characteristics was investigated experimentally. PBD made of n-type silicon with a resistivity on the order of 250 to 6000 ohms per cm with working areas of 10 and 25 mm^2 were used in the experiments. Au or Al was applied directly to the surface of the prepared detector by evaporation in a vacuum and was used as the "window" for the detector. The amplitude resolution, as well as the dependence of the magnitude of the charge created by the charged particles in the sensitive region of the detector in the back bias were determined. Alpha particles were used for the nuclear radiation. Measurement of amplitude resolution and charge was made on an

Card 1/2

UDC: 539.1.074:621.382

L 09228-67

ACC NR: AR6019916

installation consisting of a preamplifier, a type AADØ-1 differential discriminator, and a type PS-10000 scaler. The following conclusions were arrived at on the basis of the experimental results: (1) amplitude resolution for the PBD depends on "window" thickness; (2) the use of Au or Al grids, applied directly to the surface of the detector to make possible registration of higher energy particles, is limited by deterioration in amplitude resolution; (3) the PBD, together with an extremely simple component, can be used to determine the energy lost by the Alpha particles in passing through the thin layers of the substance. L. S. [Translation of abstract]

SUB CODE: 20, 14

Card 2/2

L 36966-65 EWT(1)/EWT(m)/EWA(h) Pab

ACCESSION NR: AP5007035 S/0120/65/000/001/0105/0108 21 20 B

AUTHOR: Babushkin, A. A.; Mednikov, A. K.

TITLE: Preamplifier for large-capacitance semiconductor detectors

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1965, 105-108

TOPIC TAGS: preamplifier, radiation detector, semiconductor detector 19

ABSTRACT: A new charge-sensitive preamplifier with a circuit proposed by R. L. Chase et al. (IRE Trans., 1961, NS-8, no. 1, 147) and Soviet-made parts is described. The preamplifier is intended for operation with surface-barrier detectors whose capacitance may reach a few hundred pf at a reverse bias of 10—20 v. The pulse-height resolution of the preamplifier was determined from experiments with a special n-Si 2-cm² detector (resistivity, 400—[illegible] ohm-cm). With a pulse-height-measurement error of 10%, detectors with a capacitance up to [illegible] pf [illegible] measured by the [illegible]

Card 1/2

L 36966-65
ACCESSION NR: AP5007035

10 and 15 v (capacitance, 730 and 540 pf, respectively), the resolution was 2.3%; it increased to 4% when the bias was reduced to 5 v (capacitance, 860 pf). Orig. art. has: 4 figures.

[03]

ASSOCIATION: Institut yadernoy fiziki AN KazSSR (Institute of Nuclear Physics, AN KazSSR)

SUBMITTED: 20Dec63 ENCL: 00 SUB CODE: EC, GB

NO REF SOV: 002 OTHER: 002 ATD PRESS: 3221

Card 2/2

L 28371-66 EWA(h)/EWT(m)/T IJP(c)

ACC NR: AP5027012 SOURCE CODE: UR/0120/65/000/005/0088/0091

AUTHOR: Babushkin, A. A.; Mednikov, A. K. 58 B

ORG.: Institute of Nuclear Physics of AN Kaz SSR, Alma-Ata (Institut yadernoy fiziki)

TITLE: Preamplifier for use with semiconductor detectors of nuclear radiations 19

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 88-91

TOPIC TAGS: nuclear radiation, electronic circuit, preamplifier, circuit design, radiation detector, semiconductor device

ABSTRACT: A general circuit of a charge-sensitive preamplifier is described. This device is used for operations with the semiconductor detectors having a capacitance up to 1000 pf. The preamplifier circuit is shown in Fig. 1 (see Card 2/2). The first section consisting of the L_1 to L_4 tube circuits, determines the range of input capacitances and the level of noise charges. The second section including the L_5 to L_8 tube circuits, represents a regular amplifier coordinating the charge-sensitive set with the AI-100 amplitude analyzer. The input capacitance range is increased by increasing the capacitance of feedback capacitor or by making higher the amplification factor of the cascades affected by negative feed-back. The range is also increased by including the feed-back capacitor C_3 of a high capacitance. The amplification can reach a

Card 1/3 UDC: 539.1.075

L 28371-66

ACC NR: AP5027012

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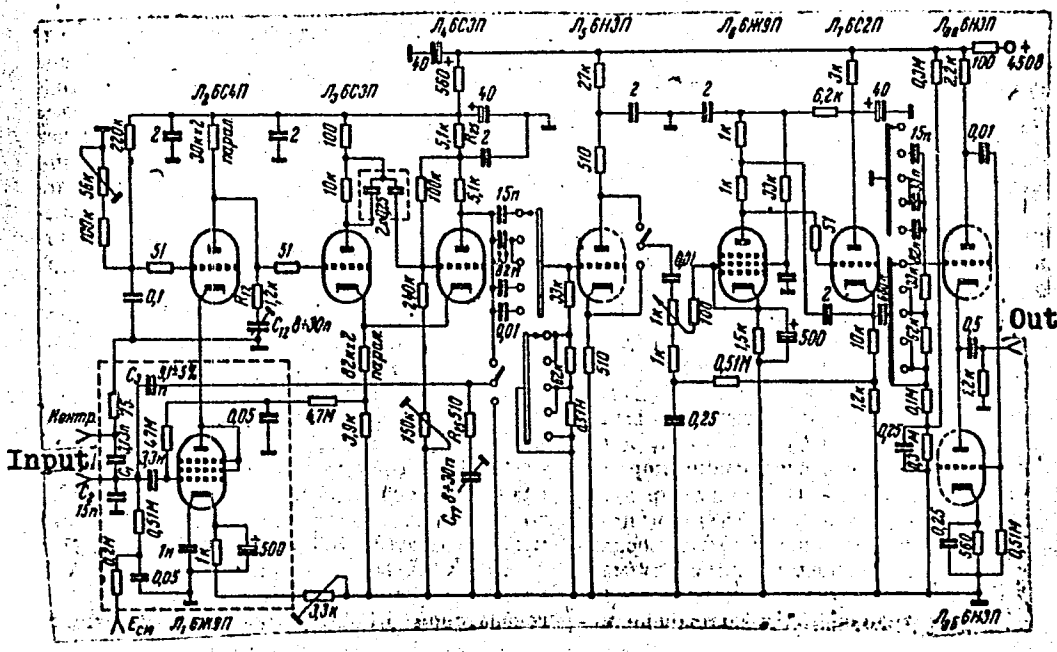


Card 2/3

L 28371-66

ACC NR: AP5027012 O

ratio of 5000. The possible self-excitation is eliminated by the inclusion of R_{12}, C_{12}, R_{25}, C_{17}, and C_2 in the circuit network. The tuning of these circuit elements is explained. The elimination of spurious oscillations by means of capacitors C_{12} and C_{17} is briefly discussed. The dependence of the output voltage and the noise level upon the input capacitance was graphically characterized. The noise curve shows a rapid increase in noises at the capacitances higher than 1 nf. The preamplifier resolution was about 2% at a 1 nf-input capacitance. Orig. art. has: 2 figures.

SUB CODE: 18 / SUBM DATE: 11Aug65 / ORIG REF: 002 / OTH REF: 002

Card 3/3 LC

BABUSHKA, I.; PRAGER, M.; VITASEK, E. (Praga)

Closure of computation processes and the drift method. Zhur. vych. mat. i mat. fiz. 4 no.2:351-353 Mr-Ap '64.
(MIRA 17:7)

S/020/63/149/002/002/028
B112/B180

AUTHOR: Babushka, Ivo

TITLE: Optimal quadrature formulae

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 2, 1963, 227-229

TEXT: One-dimensional quadrature formulae

$$\sum_{k=0}^{n}\sum_{l=0}^{q}\left(\frac{T}{n}\right)_l^{l+1} a_k f^{(l)}\left(\frac{kT}{n}\right)=\int_0^T f(x)\,dx$$

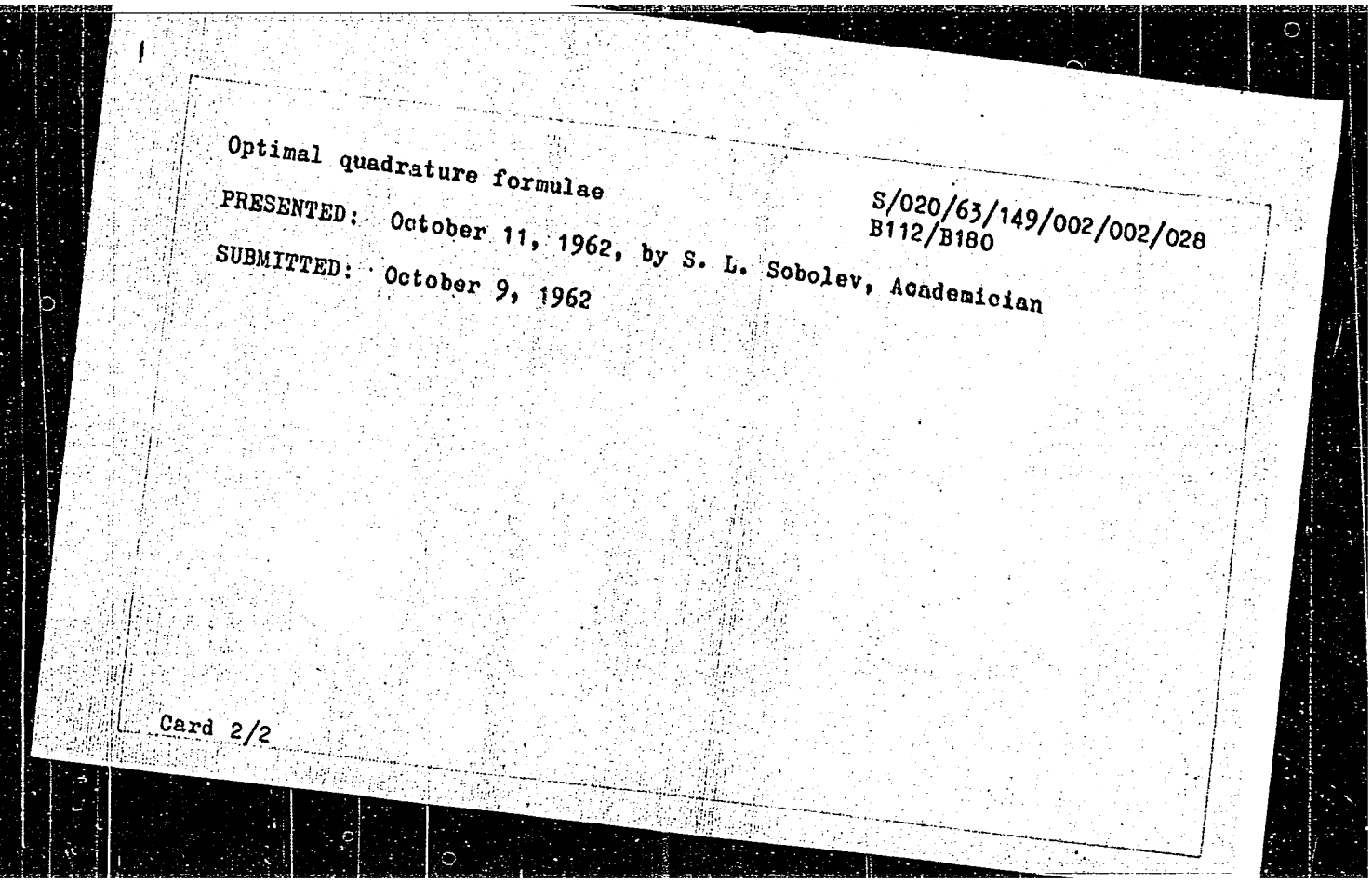
are considered. It is demonstrated that the coefficients

$$(-1)^l b_k=\frac{d^{2p-l-1}v_q}{dx^{2p-l-1}}\left(\frac{kT}{n}+0\right)-\frac{d^{2p-l-1}v_q}{dx^{2p-l-1}}\left(\frac{kT}{n}-0\right)\quad (v_q\equiv 0 \text{ for } x<0,\ x>T),$$

are optimal. There is 1 table.

ASSOCIATION: Matematicheskiy institut Chekhoslovatskoy Akademii nauk (Mathematical Institute of the Czechoslovakian Academy of Sciences)

Card 1/2



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Optimal quadrature formulae

S/020/63/149/002/002/028
B112/B180

PRESENTED: October 11, 1962, by S. L. Sobolev, Academician

SUBMITTED: October 9, 1962

Card 2/2

L 38132-66 IJP(c)

ACC NR: AP6028684 SOURCE CODE: CZ/0026/66/011/002/0113/0123

AUTHOR: Babuska, Ivo--Babushka, I. (Engineer; Doctor; Doctor of scioncos; Prague) 23

ORG: Mathematics Institute, CSAV, Prague (Matematicky ustav CSAV)

TITLE: Optimal calculation of Fourier coefficients

SOURCE: Aplikace matematiky, v. 11, no. 2, 1966, 113-123

TOPIC TAGS: mathematic space, mathematic analysis

ABSTRACT: The paper is devoted to the problem of a quadrature formula for calculation of Fourier coefficients which has optimal properties in relation to a broad class of funtional spaces. Orig. art. has: 19 formulas. [JPRS: 36,845]

SUB CODE: 12 / SUBM DATE: 16Apr65 / ORIG REF: 002 / OTH REF: 008

Card 1/1

0917 2315

L 17895-66 EWT(d) IJP(c)
ACC NR: AT6009991 SOURCE CODE: CZ/0026/65/010/002/0096/0129

AUTHOR: Babushka, Ivo--Babuska, I. (Doctor of sciences); Sobolev, S. L. (Academician)

ORG: [Babushka] Mathematics Institute, CSAV, Prague (Matematicky ustav CSAV); [Sobolev] Siberian Section, AN SSSR, Novosibirsk (Sibirskoye otdeleniye AN SSSR)

TITLE: Optimization of numerical methods

SOURCE: Aplikace matematiky, v. 10, no. 2, 1965, 96-129

TOPIC TAGS: numeric analysis, linear function, optimization, linear logic

ABSTRACT: The article reviews and summarizes the latest concepts on the optimization of concrete problems, on asymptotically optimal results for calculations of linear functionals, and on the optimization of linear problems. The authors thank N. S. Bakhvalov for assistance. Orig. art. has: 74 formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: none / OTH REF: 013 / SOV REF: 027

Card 1/1

BABUSHKIN, A.A.; PAL'CHIKOV, O.A.

Butt welding of wire in patenting furnaces. Metallurg no.9:29-30 S '56.
(MLRA 9:10)

1.Master patentirovochnogo otdeleniya Odesskogo kanatnogo zavoda (for Babushkin). 2.Master Otdeleniya tekhnicheskogo kontrolya Odesskogo kanatnogo zavoda (for Pal'chikov).
(Wire--Welding) (Annealing furnaces)

BABUSHKIN, [illegible]

TRIKHOTKO, A.F.

24(7) p 3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Pizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Lazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Card 12/30

BABUSHKIN, A.F.

Detection of relativistic wave functions considering the finite nucleus dimensions. Chekhosl fiz zhurnal 14 no.11:886-888 '64.

1. State Pedagogic Institute, Syktyvkar, U.S.S.R.

MARKHEL', Pavel Sil'vestrovich, kand. tekhn. nauk; PETROVA, Nina Nikolayevna, nauchnyy sotr.; RUSANOVA, Aleksandra Viktorovna, nauchn. sotr.; IZMAIL, Lyudmila Nikiforovna, nauchn. sotr.; BABUSHKIN, Aleksey Il'ich, master po remontu; IVANOV, Viktor Tikhonovich, pechnik; ALEKSANDROV, Vladimir Mefod'yevich, inzh.; KONOVTSEV, Svyatoslav Vsevolodovich, inzh.-mekhanik; PRITYKINA, L.A., red.; KISINA, Ye.I., tekhn. red.

[Handbook on the overhauling of bakery equipment] Spravochnik po kapital'nomu remontu khlebopekarnogo oborudovaniia. Moskva, Pishchepromizdat, 1963. 307 p. (MIRA 16:7)

1. Moscow. TSentral'nyy nauchno-issledovatel'skiy institut khlebopekarnoy promyshlennosti. Leningradskoye otdeleniye. 2. Zaveduyushchiy sektorom ekonomiki, organizatsii proizvodstva i truda Leningradskogo otdeleniya TSentral'nogo nauchno-issledovatel'skogo instituta khlebopekarnoy promyshlennosti (for Markhel').

(Bakeries--Equipment and supplies)
(Food machinery--Maintenance and repair)